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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/871,336      | 05/31/2001  | Werner Knebel        | LASP:113_US_        | 9584             |

7590

08/24/2005

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| EXAMINER |
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CABRERA, ZOILA E

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| ART UNIT | PAPER NUMBER |
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2125

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/871,336

Applicant(s)

KNEBEL ET AL.

Examiner

Zoila E. Cabrera

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 May 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,8,9,13 and 20-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,8,9,13 and 20-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/7/04; 12/9/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

20

### DETAILED ACTION

1. Claims 2-7, 10-12, 14-19 have been cancelled.

Claims 1, 8-9, 13, 20, 20-43 are remained for consideration.

### *Response to Arguments*

Applicant's arguments with respect to claims 1, 8-9, 13, and 20-43 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 8-9, 13, 20-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Penn (US 6,175,422)** in view of **Baer (US 6,259,104)**.

**Penn** discloses a method and system for generating a three-dimensional object comprising the steps of:

Regarding claims 1, 9, 24, 26, 33, 38, 41

- scanning an object model with a light beam of a light source, wherein the scanning optical system operates confocally (Col. 4, lines 56-59 and lines 65-67; Col. 1, lines 32-40),

Art Unit: 2125

detecting the light returning from the object model (Col. 3, lines 36-38; Col. 4, lines 56-65, please note that when scanning the light detected from the object model is detected in order to provide the image of the model),  
generating object model data from the detected light (Col. 3, lines 30-38- Col. 5, lines 1-2) and  
transmitting the object model data to an apparatus for object generation (Col. 2, lines 60-63);  
wherein object generation is accomplished substantially using laser beam lithography methods (Col. 1, lines 32-40 and lines 66-67);  
wherein said generated three-dimensional object is generated from a polymeric liquid and wherein said generated object is partly transparent (Col. 1, lines 32-40; Col. 3, lines 27-30).

As for claims 20-23, Penn further discloses,

- said generated object is transparent (Col. 1, lines 32-40);
- the object is generated in more than one color (Col. 3, lines 59-67)

As for claim 25, 27, 28, 29, 37

- said polymeric liquid possesses different degrees of transparency as a function of time of exposure to said light source (Col. 1, lines 32-40).
- Said object is generated from various materials (Col. 3, lines 59-67);
- Said object is generated from a mixture of polymeric liquids (Col. 1, lines 32-40).

As for claim 34-36, 42-43,

Art Unit: 2125

- Object generation is accomplished substantially by material-removing shaping (Col. 3, lines 53-58);
- The laser beam lithography machine exposes a polymer liquid can be cured by laser light (Col. 1, lines 32-40 and lines 66-67)
- Rapid prototyping methods are used for object generation (Col. 1, lines 14-16)

**Penn** discloses most of the limitations of claims 1, 9, 24, 26, and 38 above but fails to disclose some limitations of claims 1, 9, 24, 26, 38 and the limitations of claims 8, 13, 30-32, 39-40. But **Baer** discloses such limitations as follows:

As for claims 1, 9, 24, 26, 38,

Generating object model data from different intensity value and/or a wavelength and/or a polarization of the detected object model light (Col. 2, lines 60-67).

As for claims 8, 13, 30-32, 39-40

- the scanning optical system has at least one illumination pinhole and one detection pinhole (Col. 4, lines 33-35; Col. 5, lines 15-20);
- the scanning operation is controlled by a control device, and the light beam is deflected by a beam deflection device (Fig. 2)
- the light returning from the object model is reflected light and/or scattered light and/or fluorescent light (Fig. 1);
- in order to depict dynamic processes of an object plane, the object planes detected at different times are assembled into a three-dimensional object (Col. 8, lines 54-61, i.e., producing a composite image).

Art Unit: 2125

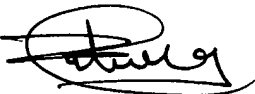
Therefore, it would have been obvious to a person of the ordinary skill in the art at the time the invention was made to combine the teachings of **Penn** with the teachings of **Baer** because it would provide a resolution enhancement technology which can be adapted to the fields of high resolution photolithography, nanofabrication and digital computer memory storage and retrieval (**Baer**, Col. 2, lines 40-44).

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning communication or earlier communication from the examiner should be directed to Zoila Cabrera, whose telephone number is (571) 272-3738. The examiner can normally be reached on M-F from 8:00 a.m. to 5:30 p.m. EST (every other Friday).

If attempts to reach the examiner by phone fail, the examiner's supervisor, Leo Picard, can be reached on (571) 272-3749. Additionally, the fax phones for Art Unit 2125 are (703) 872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 305-9600.



Zoila Cabrera  
Patent Examiner  
8/22/05